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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,308	08/20/2001	Peter Krummrich	112740-243	7463

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EXAMINER

HUGHES, DEANDRA M

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 12/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/934,308

Applicant(s)

KRUMMRICH, PETER

Examiner

Deandra M Hughes

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-9 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 5 objected to because of the following informalities: 'high power amplifier stages' should be 'high power amplifier stage' since the claim upon which claim 5 depends (claim 1) has only a single high power amplifier stage. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxham (US 6,411,407 filed Sep. 17, 1998) in view of Abate (US 6,411,414 filed Nov. 19, 1998).

With regard to claim 1, Maxham discloses:

- a modular base amplifier arrangement (30) having at least one amplifier stage (43a) and;
- a high power amplifier stage (27 – please note that a post amplifier is a power amplifier) connected to the at least one amplifier stage (43a) of the base amplifier arrangement and having an active fiber (the pre-amp and the post-

amp are EDFAs; see col. 4, line 12) at least one pump signal source (1480 pump).

Maxham does not specifically disclose that the arrangement is based on single mode technology. However, Abate teaches single mode optical amplifiers (col. 2, lines 50-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a single mode optical fiber for the advantage for the advantage of greater optical power.

With regard to claim 8, a filter is serially connected upstream from the power amplifier (SCW filt. 2, 38).

4. Claims 2, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxham (US 6,411,407 filed Sep. 17, 1998) in view of Abate (US 6,411,414 filed Nov. 19, 1998) as applied to claim 1 above, and further in view of Meli (US 6,414,769 published Jul. 2, 2002). Maxham in view of Abate does not disclose two high-power amplifier stages connected to the base amplifier arrangement. However, Meli teaches cascading high power amplifier stages (fig. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to cascade an additional high-power amplifier stage for the advantage of increased output power of the amplifier configuration.

With regard to claim 7, Meli discloses that pump 34 of fig. 3 is connected to the output of the first amplifier 32 and the input of the second amplifier 36.

5. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxham (US 6,411,407 filed Sep. 17, 1998) in view of Abate (US 6,411,414 filed Nov.

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19, 1998) as applied to claim 1 above, and further in view of Sakano (US 6,433,925 filed Jun. 17, 1998). Maxham in view of Abate does not disclose a cascadable amplifier arrangement wherein the high-power amplifier stage has its own amplification control. However, Sakano teaches independent amplification controls for each amplification stage (100, 150). It would have been obvious to one of ordinary skill in the art at the time the invention was made to independently control the amplifier stages for the advantage of reduced noise.

With regard to claim 6, Sakano teaches that these stages are controlled optoelectronically (see control circuit's control of the pump power).

Allowable Subject Matter

6. Claims 3-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter. The prior art does not teach or make obvious a single-mode modular base amplifier arrangement wherein two or more high-power amplifier stages each having their own respective amplification control arrangements are connected serially to the single-mode modular base amplifier arrangement.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Alvarez, Berg, Di Pasquale, Evans, Fee, Fermann, Koga,

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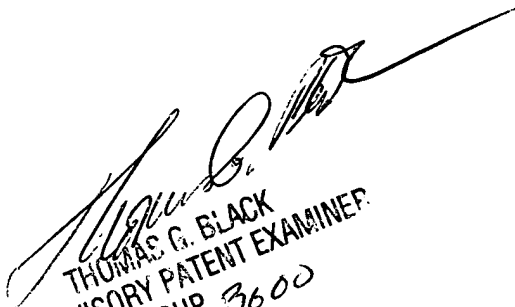
Tadashi, Marcerou, Moothart, Nakaji, Sniadower, Takatsu, Barnard, Grasso, and Tomooka disclose modular two-stage optical amplifiers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deandra M Hughes whose telephone number is 703-306-4175. The examiner can normally be reached on M-F, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 703-305-9707. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

DMH
December 11, 2002


THOMAS G. BLACK
SUPERVISORY PATENT EXAMINER
GROUP 3600